

Summaries of the bi-weekly TS and TSS concentration data are shown in columns 4 and 5 of Table 2. The mean and median TS and TSS concentrations were greater at the upstream as compared to the downstream site; however, the difference was not statistically significant according to a paired t-test performed on the bi-weekly TSS data. The TSS concentrations were much greater than those of the Little River indicating much poorer overall water quality in Crane Creek.

The total TSS load for the duration of monitoring was slightly greater upstream as compared to downstream (column 6 of Table 2). The mean and median of bi-weekly TSS loads was greater for the upstream site also. A paired t-test conducted on the bi-weekly TSS load data suggested that there was no significant difference between upstream and downstream TSS loads at the 0.05 level of significance. This result provides evidence that sediment from the highway construction occurring between the two sites had no significant effect on the TSS load in Crane Creek.

Like discharge the TSS load calculations have uncertainty associated with them. Because the load is computed using the discharge and the TSS concentration data, it includes the uncertainty from the discharge as well as the TSS concentrations. Two types of error enter into the TSS concentration: one is the representativeness of the sample to actual conditions and the other is error associated with measuring the actual TSS concentration of the sample. If both of these components of error can be assigned 5% for a total of 10%, then the total error of the TSS load is 25%, for which the uncertainty range in Table 3 column 6 originates. As shown in the Table the uncertainty is much greater than the difference between the two sites lending further evidence to the assertion that there was no discernable difference between the sites. The uncertainty values indicate, from a monitoring perspective, how much difference in the sites was needed to have reasonable confidence that there was a real difference and not one resulting from the chance uncertainties associated with monitoring this creek.

Table 2. Summary of Monitoring Data for Crane Creek.

	Rain	Discharge	TS	TSS	TSS	TSS export
	in	Mgal	mg/L		tons	ton/ac-yr
Upstream Site						
total	64.5	13,743			2,846 ±741	0.039
mean	1.34	292	153	48	61.8	
median	1.14	176	103	33	26.2	
range	0-6	2-1,020	17-253	5-218	0.2-437	
Downstream Site						
total	64.5	16,197			2,942 ±735	0.038
mean	1.34	345	89	38	61.3	
median	1.14	235	83	22	26.7	
range	0-6	3-1,200	11-317	4-223	0.2-381	

Table 3 includes summaries of the water quality parameters turbidity, temperature, conductivity, dissolved oxygen (DO), and pH. The mean and median of bi-weekly turbidity measurements were greater for the upstream site. A paired t-test of the bi-weekly values suggested that there was a significant difference in turbidities at the 0.05 level. Since the TSS